

LA-UR-23-28368

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Intended for: Report

Issued: 2023-07-24



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The Effects of the War in Ukraine on National Nuclear Security Administration (NNSA) Missions

William Tobey

I. Strategic Context

While the challenge from a risen and revisionist China may prove greater and more enduring, Russia's war on Ukraine profoundly changes the strategic context, importance, and requirements of the National Nuclear Security Administration's (NNSA) missions. *The world changed as much in February of 2022 as it did in November of 1989 or December of 1991*, when the Berlin Wall fell and the Soviet Union fell apart. These changes will not likely be ephemeral. Russia is preparing for a long war and a prolonged period of isolation from and hostility toward the West.

Although Russia has many political, economic, and military weaknesses, it retains the world's largest arsenal of nuclear weapons. Russia is therefore central to deterrence, arms control, nonproliferation, and nuclear security issues. Furthermore, Moscow's permanent membership of the United Nations Security Council affords it a veto potentially affecting all these issues.

Russia is a personalized autocracy. Abundant evidence reveals that much of the Russian military remained ignorant of the impending invasion of Ukraine until the last moments before troops plunged across the border. The United States and the International Criminal Court (ICC) have reinforced Putin's personal responsibility for Russia's war on Ukraine. President Biden called him a "butcher" and a "war criminal." The ICC issued an arrest warrant for him, ultimately precluding his attendance at a 2023 BRICS summit meeting in South Africa. War criminals are not typically invited to meet with American presidents. Thus, for as long as President Biden and Putin hold their offices, U.S.-Russian relations will be impaired.

Russia's United Nations Security Council veto also matters. The Security Council is charged with maintaining international peace and security. It is the backstop for the International Atomic Energy Agency whose statute requires that Safeguards and Nonproliferation Treaty violations be reported to the Security Council. From 1945 to 1992, the Security Council passed 725 resolutions; from 1992 to 2022, the Security Council passed nearly three times as many resolutions, in two thirds the time. The difference can be explained by the end of the Soviet Union. Soviet opposition, backed by a veto, often stymied effective Security Council action. Now that Russian revisionism is rampant, the Security Council will likely revert to its Soviet-era performance.

More broadly, Russia is disengaging from or attacking a wide range of international initiatives and organizations, including the Global Initiative to Combat Nuclear Terrorism, the International Atomic Energy Agency, and the Organization for the Prevention of Chemical Weapons. At the very last moment, Russia blocked a consensus document at the 2022 Nonproliferation Treaty Review Conference. In the words of one observer, Russia is not only violating the rules based international order; it is vandalizing it.

It is also important to note that Russia's war in Ukraine is not over and we do not know how it will end. It will doubtless affect all the realms discussed below, and one can begin to see the nature of those effects, but no one can be certain of the final result. The luxury of certainty is not possible. Events demand decisions, as even deferral is a form of decision.

II. Deterrence

Adjacent work importantly describes the new challenges posed by deterring two nuclear peer-adversaries. There is no need to duplicate that analysis. Here, the issue is: what changes to nuclear deterrence result directly from Russia's war on Ukraine? They are manifold:

- First, Moscow likely believes that its nuclear threats have prevented direct intervention by U.S. or NATO forces in defense of Ukraine, reinforcing the salience of Russia's concept of nuclear deterrence.
- Second, in making those threats, Putin and those around him advance the argument that Russia's nuclear arsenal underwrites Russia's great power status, again strengthening Russian geopolitical predilections.
- Third, Russia's disastrous prosecution of a conventional war against a smaller and nominally less capable power means that Moscow will rely more heavily on nuclear weapons—both for deterrence and, if necessary, for war-fighting.
- Fourth, the combined weight of these lessons may impel Russia to pursue additional novel weapons, in the same vein as their nuclear-armed, nuclear-powered, long-range cruise missile and torpedo. For example, if deployed, weapons such as fractional-orbital bombardment systems could undermine deterrence and strategic stability.

III. Arms Control

Even before Russia's war on Ukraine, prospects for ratifying a follow-on to the New START Treaty were dim. Russia's violations of the New START and Intermediate Nuclear Forces Treaties, the Chemical Weapons Convention, the Conventional Forces in Europe Treaty, and a host of other international treaties and agreements, have left both policy- and law-makers wary. The closely divided U.S. Senate makes assembling the two thirds majority required for treaty ratification difficult. Many Republicans are traditionally suspicious of Russian security policy; after 2016, many Democrats are resentful of Moscow's interference in U.S. elections.

Russia's war on Ukraine makes negotiation—let alone agreement and ratification—of a new strategic arms control treaty improbable. The New START agreement will expire in February of 2026. Thus, it is highly likely that for the first time in half a century no legal limits on the number of U.S. and Russian strategic offensive weapons will remain in force.

IV. Nonproliferation

The nonproliferation effects of Russia's war on Ukraine swirl in different streams:

- First, Russia's violation of the Budapest Memorandum—in which Ukraine forsook retention of Soviet nuclear weapons in return for, *inter alia*, security guarantees from Russia, the United States and Great Britain—carries stark lessons. Russia cannot be trusted. Security assurances without alliances are weak. The difference between an ally, like Poland, and a partner, like Ukraine, can literally be the difference between life and death.
- Second, those nations without a nuclear-armed ally will be tempted to increase their nuclear weapons latency. Officials in Saudi Arabia and Turkey have each discussed the possibility of advancing toward a nuclear weapons program.
- Third, even those nations with nuclear-armed allies will seek greater assurance, for example, public calls in both Poland and South Korea for the basing of American nuclear weapons on their territories.
- Fourth, Russia's reported dependencies on Iran for drones and North Korea for rockets and artillery shells likely create powerful incentives for Moscow to block any effective actions at the International Atomic Energy Agency or the United Nations Security Council to halt or reverse the Iranian or North Korean nuclear programs. Indeed, it is possible that in the context of increasing great power competition, Russia and China might one day conclude that Iranian and North Korean nuclear weapons would advance Moscow and Beijing's security interests.

V. Nuclear Security

The cooperative threat reduction programs pursued with Russia and other former Soviet states from the 1990s to the 2010s were built on two assumptions: first, the primary, if not the only, threat to nuclear and radiological security came from nonstate actors; second, the recipients most in need of cooperation were former adversaries. Current events challenge both assumptions.

In Ukraine, Russia has attacked nuclear power reactors, spent fuel storage facilities, and the people who operate them. The state-based threat to nuclear and radiological security, however, is not limited to Ukraine. In 2020, Azerbaijan threatened an Armenian nuclear power reactor. In the Middle East, where nuclear power reactors are being built and operated, missiles and drones attacked critical infrastructure with great precision and very nearly devastating consequences in 2019. The dozens of nuclear power reactors operating in Japan and South Korea all fall within range of North Korea's missile forces—which were tested more than once a week in 2022.

Drone and cyber-attacks are becoming more frequent and sophisticated. They can be targeted very precisely and can transcend borders and even oceans. Thus, no state's nuclear and radiological facilities can be considered immune from external attack.

In August of 2022, former Russian President (and current vice chair of Russia’s security council) Dmitry Medvedev threatened, “Don’t forget that there are nuclear sites in the European Union too. And incidents are possible there as well.” While Medvedev may be full of bluster, his threat cannot prudently be ignored.

An element of integrated deterrence is deterrence by denial, or taking steps to cause an adversary’s attack to fail. It would follow then, that hardening U.S., allied, and partner nuclear and radiological facilities against attacks by state actors—whether cyber or physical—would advance integrated deterrence.

VI. Los Alamos National Laboratory’s Office of National Security and International Studies (NSIS)

NSIS has three missions:

- Advise Laboratory leadership on the strategic and policy environment in which the Laboratory operates.
- Assist in bridging the policy-technology gap, helping the Laboratory to understand what is desirable from a policy perspective and Washington to understand what is possible from a technological standpoint
- Produce policy-relevant research at the intersection of science and national security, particularly on issues relevant to the work of the Laboratory, such as deterrence, arms control, nonproliferation, and nuclear security.

Recent work in pursuit of these missions includes:

- Analyses of the effects of the war in Ukraine on NNSA missions and future scenarios in Russia.
- Supporting a Laboratory Integrated Deterrence Steering Group, to coordinate such efforts.
- Establishment of a seminar series in Washington, DC in partnership with the National Defense University aimed at mid-level policy makers to deepen understanding of issues related to U.S.-China competition.
- Establishment of NSIS Fellowships to support Laboratory personnel pursuing research at the intersection of policy and technology.